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ABSTRACT

Men's and women's immediate reactions to completing the Self Directed Search (SDS) and the Strong Campbell Interest Inventory (SCII) were assessed, as well as the impact of this testing on their subsequent behaviors four weeks later. A random sample of college freshmen at the University of Kansas (N=96) completed either the SDS, SCII, or both instruments. The results indicate that: (1) the SDS has significantly more perceived stimulus value than the SCII, or the SCII and SDS combined, immediately after testing; (2) the SCII was perceived to have greater clarity of directions than the SDS; (3) there were no significant differences between groups on responses to testing or certainty about career planning; and (4) no sex differences between men and women on their immediate reactions to testing were found. A follow-up of the subjects four weeks later indicated that there were no significant sex or treatment differences between groups in satisfaction with career planning, clarity and certainty of ideas about career planning, or time spent thinking about the career planning process. Future research and implications of these results for counselors and career planning specialists are discussed. (Author)

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The Stimulus Value, Treatment Effects, and Sex Differences When Completing Two Interest Inventories at The University of Kansas

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Research Report 78-2

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Abstract*

Claims of sex bias in interest inventories and the impact of these inventories on men and women has been an important topic for the last five years. It has been recommended that research be designed to assess the impact of interest inventories on users. This study assessed men's and women's immediate reactions to completing the Self Directed Search (SDS) and the Strong Campbell Interest Inventory (SCII) and the impact of this testing on their subsequent behaviors four weeks later. A random sample of college freshmen at the University of Kansas (N = 96) completed either the SDS, SCII, or both instruments. The results indicate that: (1) the SDS has significantly more perceived stimulus value than the SCII, or the SCII and SDS combined, immediately after testing; (2) the SCII was perceived to have greater clarity of directions than the SDS; (3) there were no significant differences between groups on responses to testing or certainty about career planning; and (4) no sex differences between men and women on their immediate reactions to testing were found. A follow-up of the subjects four weeks later indicated that there were no significant sex or treatment differences between groups in satisfaction with career planning, clarity and certainty of ideas about career planning, and time spent thinking about the career planning process. Future research and implications of these results for counselors and career planning specialists are discussed.

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The Stimulus Value, Treatment Effects, and Sex Differences When Completing Two Interest Inventories at The University of Kansas

The use of interest inventories to stimulate and facilitate students' career planning is common at many colleges and universities. These inventories help students identify specific interest patterns and how these patterns might translate to future careers. The use of interest tests as part of the counseling process is a primary function of the counselor and counseling psychologist. For example, the University Counseling Center administered 710 interest inventories to counseling clients in 1976-1977 and over 612 inventories in 1977-1978 (Wigington & Price, 1978, Note 1).

Recent literature has discussed and debated possible sex bias in interest inventories (Birk, 1975; Diamond, 1975: Harmon, 1975; Holland, 1975; Tanney, 1975). Additionally, Title IX of the Education Amendments of 1972 prohibits the use of tests which may contribute to the differential treatment of students because of their sex (Federal Register, 1975). Claims of sex bias in interest testing assumes that interest inventories restrict women's exploration and choice of careers. One aspect of the sex bias in the interest measurement debate has focused on the use of raw scores or normed scores in the career testing of men and women. Journal articles and rebuttals have proliferated on this issue without resolution (Holland, Gottfredson, & Gottfredson, 1975; Holland, 1976a; Holland, 1976b; Prediger & Cole, 1975b; Prediger & Hanson, 1976; Hanson, Noeth, & Prediger, 1977). From these discussions, has emerged a critical question: Do interest inventories using norms encourage more exploratory activity than inventories using raw scores? This unanswered question and the empirical research indicating that career tests may stimulate career exploration behaviors (Cooper, 1976; Krivatsy & Magoon, 1976; McGowan, 1977; Zener & Schnuelle, 1976; Zytowski,

1977) has generated an interest in the stimulus value of interest inventories. Furthermore, these issues have sensitized practitioners to reevaluate their use, design, and the potential impact of tests.

Only a few studies have assessed students' immediate reactions to interest tests and the impact of testing on their subsequent behaviors. Also, experimental research on the differential effects of separate interest inventories on men's and women's attitudes and behaviors are sparse. It has been recommended that research be designed to investigate how interest inventories stimulate exploratory behavior in users (Cole & Hanson, 1975). There is also a need for evaluative studies to develop a clearer knowledge of how vocational interventions affect people (Holland, 1975). When a person takes an interest inventory, what are the differential effects and outcomes of the experience? This research is also needed to enable counselors to understand how testing interventions affect clients and how counselors can more effectively integrate testing in the counseling process.

The present experiment was designed to assess the immediate reactions and the impact (stimulus value) of completing the Self-Directed Search (SDS; Holland, 1970) and the Strong Campbell Interest Inventory (SCII; Campbell, 1974) before test interpretation. Specifically, this study assessed the University of Kansas students' immediate reactions to taking: 1) the raw scored SDS, 2) the normed scored SCII, or 3) both instruments. Additionally, the experiment assessed students' career attitudes and behaviors over a four week period after completing the inventories.

Method

Subjects

A sample of 400 students (200 females and 200 males) was randomly selected from all freshmen living in residence halls at the University of

Kansas. Each subject was sent an invitation to participate in an interest testing workshop. Subjects that volunteered (N = 127) were randomly divided into six experimental conditions that insured nearly equal numbers of females and males in each cell. The sample was reduced to 96 volunteers because thirty-one subjects did not attend the workshop. The experimental conditions included those subjects taking: 1. the SDS only (males, N = 16; females, N = 17); 2. the SCII only (males, N = 13; females, N = 16); and 3. the SDS and SCII (males, N = 17; females, N = 17).

Experimental Treatments

SDS. Students in this treatment group took the Self Directed Search based on Holland's (1973) theory of careers. The SDS is a self-administering, self-scoring, and self-interpreting instrument used in individual counseling, career exploration groups, and as a self-directed learning experience.

SCII. Students in this treatment group took the Strong-Campbell Interest Inventory (SCII) which is the merged male and female forms of the Strong Vocational Interest Blank (SVIB) developed by Campbell (1974).

Procedures

All subjects were sent a letter describing the opportunity to take career interest inventories in a four hour interest testing workshop. Subjects responding positively were sent a schedule so they could indicate when they could take the inventories. Each experimental group completed the SDS, the SCII, or both inventories depending on their group assignment. Subjects taking both tests completed the SDS first, then the SCII.

Immediately after testing, each subject completed the Career Interest Inventory Reaction Questionnaire assessing their immediate reactions to taking tests. Four weeks later, subjects were sent the Career Attitude and Behavior Checklist asking them to indicate their career related attitudes and how

many times they had engaged in career related activities and behaviors. Subjects not responding after one week were sent a reminder letter and those not responding after two weeks received a telephone reminder to return the questionnaire.

Questionnaire Instruments

Career Interest Inventory Reaction Questionnaire

This questionnaire (O'Neil & Price, 1976, Note 2) was used to obtain subjects' immediate evaluation of the testing experience. It was a modified version of Zener and Schnuelle's (1976) student evaluation form. Subjects were asked to respond on a five point likert scale (strongly agree to strongly disagree) to 15 questions about the testing experience. A factor analysis of the 15 questions resulted in four areas related to students' reaction to the testing experience. The four factors included: (1) Factor 1, career stimulation (item content was concerned with how the tests stimulated subjects to think about career planning), (2) Factor 2, response to testing (item content was concerned with subjects' personal reactions to the inventories), (3) Factor 3, clarity of directions (item content was concerned whether the tests have clear directions), (4) Factor 4, certainty about career planning (item content was concerned with how certain the subjects felt about the career planning process). Hoyt's reliability coefficients (Hoyt, 1941) on each factor were unusually high ranging from .93 to .97.

Career Behavior and Attitude Checklist Questionnaire

This questionnaire (O'Neil & Price, 1976, Note 3) assessed student attitudes and behaviors four weeks after the testing experience. The questionnaire consisted of items similar to the ones used by Zener and Schnuelle (1976) in their Vocational Guidance Questionnaire and Krivatsy

and Magoon's (1976) Vocational Checklist. Both questionnaires were modeled after earlier career development outcome research (Krumboltz & Schroeder, 1965; Krumboltz & Thoresen, 1964; Thoresen & Krumboltz, 1967; Thoresen, Krumboltz, & Varenhorts, 1967). The seventeen-item questionnaire was factor analyzed and yielded three factors related to career attitudes and behaviors of students one month later. The three factors included: (1) Factor 1, satisfaction with the career planning process (item content was concerned with subjects' satisfaction with career planning process and future needs), (2) Factor 2, clarity and certainty of ideas about career planning (item content was concerned with subjects' clarity and certainty about their career choices), (3) Factor 3, time spent thinking about career planning (item content was concerned with the amount of time that subjects spent thinking about their career planning). Hoyt's reliability coefficients (Hoyt, 1941) ranged from .85 to .96.

Analysis

Separate analysis of the Career Inventory Reaction Questionnaire and the Career Behavior Attitude Checklist Questionnaire was performed. In each case, the treatment groups were compared using multivariate analysis of variance procedures on factor scores for each subject in the group. The analysis tested for sex and treatment differences. Where statistically significant effects were found a post-hoc discriminant analysis, a univariate analysis of variance, and post-hoc Scheffé procedures were used to determine which treatments were significantly different from each other.

Results

The means and standard deviations for the three treatment conditions on the four factors are presented in Table 1.

Insert Table 1 Here

The results of the multivariate analysis of variance on the four post-test factor scores yielded a significant treatment effect, F, (8, 174) = 2.497, $p < .015$. Significance was not attained by the sex effect, F, (4,87) = .579, $p > .05$, nor the interaction effect, F, (8, 174) = .882, $p > .05$, which demonstrated that the sex of the subject did not enter into the results either alone or in combination with the treatment conditions. Only the testing condition of the subjects was significant.

The post-hoc discriminant analysis was performed on the significant treatment effects of the MANOVA to examine the relative contribution of each factor score on the results. The discriminant function was significant; Bartlett's $X^2(8) = 19.238$, $p < .013$.

The post-hoc discriminant analysis derived a function which demonstrated that the significance of the treatment effect was due to Factors 1 and 3. The low loadings on Factor 2 and 4 showed that each of these factors did not contribute to the significant treatment effect. As a further post-hoc test, a univariate analysis of variance was performed on Factors 1 and 3.

The ANOVA on Factor 1 (career stimulation) produced a significant treatment effect, F (2,90) = 3.478 $p < .035$, and post-hoc Scheffé comparison of means demonstrated that the SDS treatment group had significantly higher scores for this factor than the other two treatment conditions, $t(93)$ = 2.599, $p < .05$. The ANOVA on Factor 3 (clarity of directions) also produced a significant treatment effect, $F(2,90) = 4.340$, $p < .016$. The post-hoc Scheffé test of mean differences showed that the scores on Factor 3, relating to the clarity of the directions of the tests, were higher for the SCII treatment group than either of the other two treatment groups, $t(93)$ = 2.420, $p < .05$.

The subjects reported that the SDS was more stimulating in terms of examining careers but that the directions of the SDS were not as clear as those of the SCII. In addition, the treatment group that took both the SDS and the SCII together did not perceive them as stimulating as the SDS alone group, as measured by Factor 1, nor as clear as the SCII alone group, as measured by Factor 3.

Results from the Follow-up Questionnaire

The means and standard deviations of the three factor scores on the Career Behavior and Attitude Checklist Questionnaire are presented in Table 2.

Insert Table 2 Here

The results of the MANOVA on the three factor scores were not significant. Over the four weeks, there were no significantly differential effects of any of the treatment groups.

Discussion

This research assessed the reactions of Freshmen students at the University of Kansas taking the SDS, the SCII, or both immediately after testing and subsequent career attitudes and behaviors one month later. The results indicate that the subjects perceive the SDS to have significantly more stimulus value than the SCII or the SCII and the SDS combined immediately after testing. Although no significant differences in stimulus value were found between instruments over a one month period, the results do support Holland's belief that the self-scoring and directed treatments, like the SDS, provide immediate feedback and therefore have a stimulus effect on the

user. Counselors using the SDS in counseling need to be aware that the SDS has the potential to stimulate clients in thinking about careers. Since the nature of this thinking is still unknown and the issues of sex bias in testing are unresolved, counselors need to be sensitive to client reactions to the SDS, fully process these reactions, and integrate them into the counseling process. Counselors using the SDS as a purely self-directed instrument need to provide opportunities for clients to talk about the results.

The results also indicate that subjects perceived the SCII to have greater clarity of directions than the SDS. In this experiment, the 1970 edition of the SDS was used. If the 1977 edition (Holland, 1977) with its simplified scoring was used, perhaps no difference in the clarity of directions would have been observed. No significant differences were found between groups on responses to testing or certainty about career planning. A one month follow-up of subjects indicated no significant differences exist between groups in satisfaction with the career planning process.

The results also produced no sex differences in terms of immediate reactions to testing or subsequent career attitudes and behaviors one month later. Men and women students did not respond significantly different to the immediate testing experience or the follow-up one month later. These results contribute to the debate on the use of raw versus normed scores. It has been argued that the use of the SDS, with its raw scores, might restrict a person's career choices to those consistent with their early sex-role socialization (Prediger & Cole, 1975a). This perspective has suggested using normed scored instruments like the SCII, Kuder, or the ACT-IV because of the potentially restrictive and sex biased nature of raw scores. These investigators have hypothesized that normed scored instruments are more beneficial and less restrictive than raw scored instruments

(Hanson, Noeth, & Prediger, 1977; Prediger & Cole, 1975a). This research found no support for this hypothesis because no sex differences in immediate or short term reactions to the SDS, SCII, or both were found.

In short, taking the SDS (raw scores) or SCII (normed scores), male and females' attitudes and behaviors immediately after testing and one month later were the same regardless of the use of raw or normed scores. This research supports two of Holland's contentions; 1) that the SDS promotes the vocational welfare of men and women equally, and 2) that experimental studies on interest inventories would not find gross differences in beneficial effects (Holland, 1976a).

This study extends the research assessing the effects and stimulus value of interest tests and other career treatment modes (Cooper, 1976; Krivatsy & Magoon, 1976; McGowan, 1977; Zener & Schnuelle, 1976; Zytowski, 1977). Future research needs to assess the impact of these tests and others after interpretation. Specifically, this research should assess the number and the range of careers that users might choose to explore after completing interest inventories. A limitation of the present study is the lack of control groups in assessing the impact of testing over a follow-up period. Future studies should include control groups to compare the effects of these tests on users and non-users. Additionally, more experimental studies need to be designed to resolve such questions as whether raw scored instruments do restrict or expand the career options of men and women. Through these treatment studies, a greater understanding of the use and equity of interest inventories will emerge and consequently reduce the potential for interest inventories to contribute to sexism in counseling.

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TABLE 1

Means and Standard Deviations for the Career Interest Inventory Reaction Questionnaire

	SCII ONLY			SDS ONLY			BOTH SCII & SDS		
	M	SD	N	M	SD	N	M	SD	N
Males									
Factor 1	16.15	4.01	13	18.18	4.10	16	17.59	3.51	17
Factor 2	15.84	3.82	13	16.00	3.95	16	17.47	2.26	17
Factor 3	8.92	2.25	13	8.25	1.29	16	8.00	1.62	17
Factor 4	12.69	2.32	13	10.93	3.37	16	12.24	2.97	17
Females									
Factor 1	17.62	4.22	16	20.41	2.47	17	17.12	4.64	17
Factor 2	16.31	4.88	16	18.29	4.04	17	17.29	3.94	17
Factor 3	9.37	.88	16	8.17	1.42	17	8.18	1.70	17
Factor 4	11.25	3.06	16	12.70	3.65	17	13.29	3.25	17

TABLE 2

Means and Standard Deviations of Career Behavior and Attitude Checklist Questionnaire

	SCII ONLY			SDS ONLY			BOTH SCII & SDS		
	M	SD	N	M	SD	N	M	SD	N
Males									
Factor 1	23.67	6.95	12	28.23	2.42	13	25.44	5.70	16
Factor 2	14.67	3.23	12	14.92	1.98	13	14.56	4.00	16
Factor 3	14.83	2.17	12	15.23	2.20	13	15.17	3.47	16
Females									
Factor 1	26.13	6.49	16	26.42	9.00	16	24.50	6.97	16
Factor 2	14.56	2.78	16	13.17	5.18	16	14.31	4.50	16
Factor 3	18.19	2.83	16	14.75	5.19	16	15.06	3.24	16